EXHIBIT 7

Milliman Research Report

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Long-Term Care Insurance Valuation

An Industry Survey of Assumptions and Methodologies

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I. OVERVIEW

Milliman has conducted its fourth triennial long-term care (LTC) insurance valuation survey. We compiled survey responses from 26 individual carriers. We did not include group business in this year's survey as there are only a limited number of companies in the group LTC insurance market. Previous valuation surveys were conducted in 2003, 2006, and 2009. Many of the survey questions remain consistent with the previous surveys. This allows for comparisons of the change in responses over time. In addition, several new questions were added for 2012, including a section on current assumptions used to test active life reserves.

The objectives of this survey are to review and document the assumptions and methodologies related to the determination of active life and disabled life reserves, as well as the asset strategies and investments backing the reserves.

The information presented includes brief commentary on the application of various methods and approaches of several technical LTC valuation issues. This report assumes that the reader is familiar with LTC insurance, including product design and benefits, as well as current valuation standards.

The results of this survey are intended to provide interested parties with general benchmarks regarding insurers' current valuation assumptions. In preparing this summary of the valuation survey, we relied on companies to accurately report their valuation assumptions and methodologies. While we did review the responses for general reasonableness, we included the responses as reported. The survey is merely a tally of valuation assumptions, not necessarily a carrier's actual experience. The reader should keep this in mind when evaluating the results in this report.

The results of this survey are intended to provide interested parties with general benchmarks regarding insurers' current valuation assumptions.

This survey included questions with regard to GAAP, statutory (STAT), and tax (TAX) reserve bases. Some companies do not hold GAAP reserves because of their financial structure. Therefore, GAAP results are presented for only a limited number of companies.

All responses are related to a carrier's most recently issued LTC product series. In order to avoid distortions from valuation assumptions used for policies issued many years ago, Section II, Active Life Reserve: Valuation Assumptions and Methodologies, generally includes only companies that are currently selling new business. Sections III through V of this survey include all companies. It should also be noted that not all companies answered every question, resulting in the number of responses varying by question.

The carriers included in the survey are listed in Appendix A.

Finally, commentary offered throughout this report includes the authors' opinions, which do not necessarily represent those of Milliman. Because the articles and commentary prepared by the professionals of our firm are often general in nature, we recommend that our readers seek the advice of an actuary or attorney before taking action. We, Daniel Nitz and Allen Schmitz, are associated with Milliman, Inc. and are members of the American Academy of Actuaries. We are qualified under the Academy's Qualification Standards to render the opinions with regard to the actuarial calculations set forth herein.

II. ACTIVE LIFE RESERVES: VALUATION ASSUMPTIONS AND METHODOLOGIES

Active life reserves (ALR) reflect the liability for future contingent claim events, and are typically the largest reserve held by LTC insurance companies. Active life reserves, contract reserves, and policy reserves are assumed to be synonymous in this report. This section summarizes the responses relating to the valuation assumptions and methodologies used for a company's most recently issued policies. In order to avoid distortions from valuation assumptions used for policies issued many years ago, this ALR section of the survey generally includes only companies selling new business in 2011 (for survey questions related to methodology, all responses are included). The next section summarizes the responses relating to the assumptions and methodologies used by companies to test their ALRs. Topics covered in this section relating to active life reserves include:

- Mortality
- Ultimate lapse rates
- Morbidity
  - Morbidity sources
  - Provision for adverse deviation
  - Morbidity improvement
- Methodology and other issues
  - Provision for loss adjustment expense
  - Interest rate
  - Waiver of premium methodology
  - Active life reserves for disabled lives
  - Reserving for rate increases
  - System
  - Reserving approach for complex riders
  - Principle-based reserves
  - Premium reserves

MORTALITY

As seen in Figure 1, the 1994 Group Annuity Mortality table (GAM) is the most common valuation assumption used throughout the industry for calculating active life reserves. One reason might be that the 1994 GAM table is the referenced table for LTC insurance in the current version of the National Association of Insurance Commissioners (NAIC) Health Insurance Reserves Model Regulation. Our survey indicates that all individual companies we contacted use 1994 GAM for STAT and TAX active life reserves, and 75% of companies use the 1994 GAM for GAAP active life reserves, with the remaining companies using the 2000 Annuity table.

In addition, about one-third of the companies responded that they applied mortality selection factors for their STAT and TAX valuation assumptions and six out of eight responded that they assume mortality selection for GAAP reserves. All companies indicated that they do not use any future mortality improvement in their STAT or TAX valuation assumptions, but about one-third assume future mortality improvement for GAAP.

Because the Model Regulation specifies the 1994 GAM for policies issued after January 1, 2005, there has been little change in mortality assumptions since our 2006 or 2009 survey, which also indicated that most companies used the 1994 GAM table.

FIGURE 1: VALUATION MORTALITY TABLE

	PERCENT OF RESPONSES		
MORTALITY TABLE ASSUMPTION	STAT	TAX	GAAP
1994 GAM	100%	100%	75%
2000 ANNUITY	0%	0%	25%

Note:
- Some companies do not hold GAAP reserves
- 12 responses for STAT and TAX; 8 for GAAP

ULTIMATE LAPSE RATES

A summary of ultimate lapse rates assumed by insurers in their active life reserve calculations is shown in Figure 2. Please note that survey respondents were asked to provide the STAT and TAX lapse rates prior to any NAIC limiting formulas. A number of companies indicated that they vary their valuation lapse assumptions by age, marital status, inflation, and premium payment option, while other companies indicated use of only a single set of lapse assumptions (and premium payment option). In order to consistently compare lapse assumptions, we requested the ultimate lapse rate for the following two different plans and demographic characteristics:

Plan 1

- Issue age 55
- Male
- Single
- No inflation protection
- Lifetime benefit period

Plan 2

- Issue age 65
- Female
- Married
- 5% compound inflation protection
- 5-year benefit period

All but one company indicated that they assumed the same lapse rate for both plans. Therefore, Figure 2 only shows the ultimate lapse assumptions for Plan 1.

In this year's survey, the average ultimate lapse rate assumed for STAT is 1.1% for both Plans 1 and 2, and TAX and GAAP had about the same average lapse rate. Compared to our 2009 survey, ultimate lapse rates have decreased slightly. The majority of companies in the 2009 survey (11 of 19) indicated ultimate lapse rates in the range of 0.5% to 1%, while the average is 1.2%. While most companies are in the range of 0.5% to 1%, some companies are now reporting assuming lapse rates in the range of 0% to 0.5%, where no companies reported in that category in previous surveys.

In this year's survey, the average ultimate lapse rate assumed for STAT is 1.1% for both Plans 1 and 2, and TAX and GAAP had about the same average lapse rate. Compared to our 2009 survey, ultimate lapse rates have decreased slightly.

FIGURE 2: ULTIMATE LAPSE RATE ASSUMPTION (PLAN 1)

	PERCENT OF RESPONSES		
ULTIMATE LAPSE RATES	STAT	TAX	GAAP
0% - 0.5%	25%	25%	11%
0.51% - 1.0%	33%	33%	56%
1.01% - 1.5%	17%	17%	22%
1.51% - 2.0%	25%	25%	11%
2.01%+	0%	0%	0%

Note:
- Some companies do not hold GAAP reserves
- 12 responses for STAT and TAX; 9 for GAAP

MORBIDITY

The lack of a standardized industry morbidity table results in companies setting their own assumptions for STAT, TAX, and GAAP reserves. The magnitude, and more importantly the slope, of the age-cost curve can have a dramatic impact on the durational development of LTC active life reserves. When surveying companies regarding their morbidity assumptions, we asked for three pieces of information:

- Morbidity sources
- Provision for adverse deviations (PAD)
- Morbidity improvement

Morbidity sources

We asked companies for the source of the claim cost assumptions that are used in the development of their active life reserves. The results are summarized in Figure 3. The source of the assumptions is split between a company's own data and that of a consultant (including times where a company started with consultant assumptions and adjusted them to their own data). None of the companies use population-based data sources as the primary data sources for their morbidity assumptions, which was more common many years ago when LTC insurance was just emerging. Of the companies that responded using assumptions provided by consultants, a number of them indicated that they made adjustments based on their own experience. The Company Data category in Figure 3 implies that the assumptions were developed solely from company data.

FIGURE 3: SOURCE OF MORBIDITY ASSUMPTION

MORBIDITY SOURCES	PERCENT OF RESPONSES
COMPANY DATA	33%
CONSULTANT (MAY INCLUDE COMPANY ADJUSTMENTS)	67%

Note: 12 responses

Provision for adverse deviation

Based on our survey, we found that the use of morbidity provisions for adverse deviation (PADs) varies widely, although many companies omit them altogether. The average morbidity PAD for STAT was 4.6% and 3.8% for TAX. Of the companies that completed the GAAP section, the average morbidity PAD was 4.2%. The survey results are in Figure 4.

Based on our survey, we found that the use of morbidity provisions for adverse deviation (PADs) varies widely, although many companies omit them altogether.

FIGURE 4: MORBIDITY PROVISION FOR ADVERSE DEVIATION (PAD)

	PERCENT OF RESPONSES		
MORBIDITY PAD (AS % OF INCURRED CLAIMS ESTIMATE)	STAT	TAX	GAAP*
0%	42%	58%	44%
1% - 5%	42%	25%	33%
6% - 10%	0%	0%	11%
11%+	17%	17%	11%

Note:
- Some companies do not hold GAAP reserves
- 12 responses for STAT and TAX; 9 for GAAP
- Percentages may not add to 100% due to rounding

In general, the number of companies that choose to include a PAD in their reserves has remained roughly consistent over previous surveys. It should be noted that there may be additional margins in the reserves due to the prescribed valuation interest rates.

Morbidity improvement

The survey asked companies if they included future morbidity improvement in their valuation assumptions. As the NAIC Model Regulation prohibits the use of morbidity improvement in the calculation of statutory active life reserves, all companies indicated that they did not assume any morbidity improvement. Also for TAX, all companies assumed no morbidity improvement. However, one-third of the companies indicated they assumed future morbidity improvement for GAAP reserves. These results are similar to prior years. It should be noted that while companies do not assume morbidity improvement when calculating their statutory reserves, some do include it when testing their reserves (see the next section for details).

PROVISION FOR LOSS ADJUSTMENT EXPENSE

Survey respondents were asked what provision for loss adjustment expense (LAE) is made, if any, in their active life reserve calculations. Figure 5 includes a summary of the LAE loads, as a percent of the active life reserves.

FIGURE 5: PROVISION FOR LOSS ADJUSTMENT EXPENSE (LAE)

	PERCENT OF RESPONSES		
LAE AS % OF ACTIVE LIFE RESERVES	STAT	TAX	GAAP
0%	78%	78%	29%
0.1% - 2.5%	0%	0%	14%
2.6% - 5.0%	22%	22%	43%
> 5.0%	0%	0%	14%

Note:
- Some companies do not hold GAAP reserves
- 9 responses for STAT and TAX; 7 for GAAP

Consistent with the surveys from previous years, most companies omit explicit provisions for LAE in their STAT and TAX active life reserve bases. However, many companies implicitly reflect LAE in their reserve calculations through loss recognition testing and gross premium valuations in which all reserves are compared with future benefit and expense payouts relative to premium income.

Because of GAAP reserving requirements and because GAAP reserves are typically developed with best estimate assumptions and modest PADs, most companies include more explicit LAE assumptions in the GAAP active life reserve development. GAAP LAE is typically reflected via a load to the benefit reserves or a separate expense reserve.

INTEREST RATE

From a STAT and TAX perspective, most companies surveyed used the prescribed interest rate. As GAAP interest rates vary by company, a summary of GAAP interest rate assumptions is shown in Figure 6.

FIGURE 6: GAAP VALUATION INTEREST RATE

GAAP INTEREST RATE	PERCENT OF RESPONSES
<= 4.0%	29%
4.01% - 4.99%	29%
5.00% - 5.50%	43%
>= 5.51%	0%

Note: 7 responses

The average GAAP interest rate was 4.6%. Overall, there has been a downward trend in interest rates compared to prior surveys.

The average GAAP interest rate was 4.6%. Overall, there has been a downward trend in interest rates compared to prior surveys. The average interest rate in prior surveys was 5.5% in 2009, 5.8% in 2006, and 6.2% in 2003.

WAIVER OF PREMIUM METHODOLOGY

The survey asked about the treatment of waiver of premium in the active life reserve calculations. The most common approach, followed by 92% of the companies, was to increase benefit payments in the reserve calculation to reflect the cost associated with the waiver (waiver of premium is included in both premium and claims). The other approach uses a methodology to develop active life reserves assuming that only active policyholders (versus both active and disabled policyholders) pay premiums (waiver of premium is excluded from both premium and claims).

ACTIVE LIFE RESERVE FOR DISABLED LIVES

Almost all companies currently selling business reported holding active life reserves for those on claim, although one company did indicate making a reduction to the ALR to reflect the claim reserve. Also, two companies not currently selling business reported making some degree of reduction to the ALR for disabled lives.

RESERVING FOR RATE INCREASES

Companies were asked if they change reserves following a rate increase. Almost all of the companies surveyed indicated that any rate increase was only considered in reserve adequacy testing, and reserve changes occurred only if they were required by the reserve adequacy test. On the GAAP side, all companies indicated that the reserves would not change as the SEC has ruled against unlocking the reserves for rate increases on LTC.

SYSTEM

Figure 7 shows the number of companies that use a commercial valuation system for their active life reserves versus those that have "homegrown" systems. In general, the results are consistent with prior surveys. All companies indicated that the reserving system used works on a seriatim basis (as opposed to higher-level groupings).

FIGURE 7: ALR SYSTEM

SYSTEM	PERCENT OF RESPONSES
HOMEGROWN	27%
COMMERCIAL	73%

Note: 26 responses, includes all companies

RESERVING APPROACH FOR COMPLEX RIDERS

Modeling for some riders for LTC can be quite complex. Perhaps the two most difficult to model are the shortened benefit period (SBP) and the shared care rider. Both riders require considerable formula changes to a typical valuation system. Of the 22 companies that answered the SBP question, 64% said they followed a simple approach of increasing the reserve by the premium differential. The other companies indicated that they followed a complex calculation of the benefits. A similar response was given for the shared care rider; 73% of the 11 companies that responded (some indicated that they did not offer that benefit) said they followed a simple approach of increasing the reserve by the premium differential, while the others followed a more complex model.

PRINCIPLE-BASED RESERVES

Principle-based reserves, or more broadly, a "principle-based approach" (PBA), is an effort to create a new framework for reserves and capital requirements for U.S. life insurers. PBA is likely years away for LTC. Efforts are ongoing to examine LTC from a stochastic perspective, including morbidity and mortality.

This valuation survey indicates that all companies are monitoring results and proceedings with respect to PBA. Some companies have indicated that they started to develop a stochastic model to test the impact of a stochastic approach to reserving.

PREMIUM RESERVES

The survey asked whether the unearned premium reserve was held on a gross or net basis (net valuation premium). The NAIC Health Insurance Reserve Model Regulation states that the sum of the unearned premium reserve and active life reserve cannot be less than the gross unearned premium reserve. Therefore, after the first couple policy durations, companies can hold the net unearned premium reserve. Figure 8 summarizes the responses for STAT. It should be noted that most companies followed the same approach for GAAP, except for two companies that switched to holding the unearned premium reserve on a gross basis for GAAP.

FIGURE 8: STAT PREMIUM RESERVE METHODOLOGY

METHODOLOGY	PERCENT OF RESPONSES
GROSS	38%
NET	62%

Note: 26 responses, includes all companies

III. ACTIVE LIFE RESERVES: TESTING

This section describes the approach and methodologies used to test the adequacy of the active life reserves. The previous section described the valuation assumptions and methodologies used to calculate the ALR balance. As all companies are required to test their reserves, responses from all companies are included in this section (not just those companies currently selling business). Because this section is new to this year's survey, comparisons to prior surveys are not possible.

The survey separated assumptions used for testing STAT versus GAAP ALR. For the most part, the assumptions were the same. The responses in this section are based on the assumptions used to test statutory reserves. Comments are provided where GAAP testing assumptions differ from statutory.

Topics covered in this section relating to active life reserves include:

- Adequacy testing approach
- Monitoring and updating
- Mortality
- Ultimate lapse rates
- Interest rate
- Morbidity
  - Morbidity sources
  - Provision for adverse deviation
  - Morbidity improvement
- Future rate increases

ADEQUACY TESTING APPROACH

The survey asked what approach is performed to test the active life reserve. The responses were categorized into those companies that only conduct a gross premium valuation (GPV) versus those that conduct some form of cash-flow (CF) testing, which includes asset modeling and may include testing stochastic interest rate scenarios. Figure 9 shows the results of the type of active life reserve adequacy testing performed.

FIGURE 9: ALR ADEQUACY TESTING APPROACH

METHOD	PERCENT OF RESPONSES
GPV ONLY	23%
CF TESTING	77%

Note: 26 responses

Different approaches are followed for aggregating the reserve testing results. Figure 10 shows the three main approaches companies use for aggregating statutory results.

FIGURE 10: LEVEL OF AGGREGATION OF STATUTORY RESERVE TESTING RESULTS

METHOD	PERCENT OF RESPONSES
LTC LINE OF BUSINESS	50%
HEALTH LINES COMBINED	8%
COMPANY LEVEL	42%

Note: 24 responses

For cash-flow testing, most companies followed the same approach for dealing with deficiencies in interim years. For non-New York business, interim negative results are generally ignored as reserve testing is measured over the lifetime. For New York business, additional reserves are held to cover interim negative results.

As a result of the reserve testing, 40% of companies responded that they needed to strengthen their statutory reserves at some point and 44% strengthened their GAAP reserves.

MONITORING AND UPDATING

The survey asked how often companies monitor morbidity and persistency as well as how often those assumptions are reviewed for changes. Figure 11 shows how often companies monitor morbidity and persistency. Morbidity is monitored somewhat more frequently. This may be due to higher potential variability and a need to quickly react to emerging morbidity experience.

FIGURE 11: FREQUENCY OF MONITORING ASSUMPTIONS

FREQUENCY	MORBIDITY	PERSISTENCY
MONTHLY	17%	4%
QUARTERLY	38%	46%
ANNUAL	46%	50%

Note: 24 responses

Companies that annually review their reserve testing assumptions and make changes as warranted make up 79% of respondents whereas 13% make changes quarterly and 8% only change assumptions every couple of years. Over the last two years, almost all companies reported making some change to the assumptions.

Companies that annually review their reserve testing assumptions and make changes as warranted make up 79% of respondents whereas 13% make changes quarterly and 8% only change assumptions every couple of years.

MORTALITY

The most common mortality table used in testing the ALR is the 1994 Group Annuity Mortality (GAM) followed by the 2000 Annuity table. A few companies indicated that they applied a factor (such as 90% or 95%) to the underlying table. Some companies indicated that they constructed their mortality assumptions based on their own experience. The table in Figure 12 shows the responses.

FIGURE 12: CURRENT MORTALITY ASSUMPTIONS: UNDERLYING TABLE

UNDERLYING TABLE	PERCENT OF RESPONSES
1983 GAM	16%
1994 GAM	44%
2000 ANNUITY	20%
INSURED EXPERIENCE	8%
OTHER*	12%

* Other includes 2008 VBT, SOA 90-95 Table, and the 1983 IAM
Note: 24 responses

In addition to the underlying table, 68% of the companies indicated that they apply mortality selection factors. While there is a great deal of variability in the selection factors reported, most start with a factor between 0.20 to 0.35 and grade up over 15 to 20 years. Some companies reported a significantly shorter period of grading of only five years while several extended the period to 25 years. The majority of companies not using mortality selection factors are closed blocks of business beyond the early part of the select period.

Assuming future mortality improvement was indicated by 32% of the companies. Some companies reported using one of the projection scales associated with the underlying tables, such as G or AA, while others reported using a flat amount, such as 0.5% per year.

The survey also asked questions about assuming future mortality improvement. Assuming future mortality improvement was indicated by 32% of the companies. Some companies reported using one of the projection scales associated with the underlying tables, such as G or AA, while others reported using a flat amount, such as 0.5% per year.

The survey also asked about the modeling approach used in reserve testing related to projecting lives in aggregate or split between active lives and disabled lives. There are generally two approaches followed. The first approach models all lives combined. This implicitly treats mortality as a blend of active and disabled mortality. The majority of companies follow this approach, with 21 of 25 companies reporting they apply mortality in aggregate. The other approach models active lives separate from disabled lives and includes explicit assumptions for active and disabled mortality. The other four companies reported using this approach.

ULTIMATE LAPSE RATES

A summary of ultimate lapse rates assumed in reserve testing is shown in Figure 13. This year's survey indicates that a majority of companies use a lapse rate in the range of 0.5% to 1%, with the average being about 1.1% (consistent with the average for the assumptions underlying the ALR calculations for those companies currently selling business). About half of the companies reported that they assume a single lapse rate that only varies by duration (and premium payment option). The other companies indicated that they vary their lapse assumptions by product, benefit period, issue age, marital status, inflation option, and distribution channel. In order to consistently compare lapse assumptions, we requested the ultimate lapse rates for the following two different plans and demographic characteristics:

Plan 1

- Issue age 55
- Male
- Single
- No inflation protection
- Lifetime benefit period

Plan 2

- Issue age 65
- Female
- Married
- 5% compound inflation protection
- 5-year benefit period

Six companies reported different ultimate lapse rates between the two plans.

FIGURE 13: ULTIMATE LAPSE RATE ASSUMPTION

ULTIMATE LAPSE RATE	PLAN 1	PLAN 2
0% - 0.5%	13%	13%
0.51% - 1.0%	39%	43%
1.01% - 1.5%	26%	26%
1.51% - 2.0%	22%	13%
2.01%+	0%	4%
AVERAGE	1.13%	1.10%

Note: 24 responses

INTEREST RATE

The survey asked what interest rate was used in discounting if a gross premium valuation (GPV) or deferred acquisition cost (DAC) recoverability test was conducted. Some companies indicated that they used an interest rate that varies based on future rates or stochastic interest rate projections. Most companies, however, indicated that they used a single discount rate. For testing statutory reserves, the single rate ranged from 4.0% to 6.2% with an average of 5.3%. For testing GAAP reserves, the single rate was higher, ranging from 5.0% to 6.6% with an average of 5.8%.

Some companies indicated that they used an interest rate that varies based on future rates or stochastic interest rate projections. Most companies, however, indicated that they used a single discount rate.

MORBIDITY

Morbidity is one of the most subjective assumptions included in the calculation of active life reserves because of the lack of a standardized industry table. The magnitude, and more importantly the slope, of the age-cost curve can have a dramatic impact on the durational development of LTC active life reserves. When surveying companies regarding their morbidity assumptions, we asked for three pieces of information:

- Morbidity sources
- Provision for adverse deviations (PAD)
- Morbidity improvement

Morbidity sources

Because of confidentiality concerns, we did not ask each company for a sample of its claim cost assumptions. Instead, we simply asked companies for the source of the claim cost assumptions that are used in the testing of their active life reserves. The results are summarized in Figure 14. The source of the assumptions is split between a company's own data and that of a consultant (including times where a company started with consultant assumptions and adjusted them to their own data).

FIGURE 14: SOURCE OF MORBIDITY ASSUMPTION

MORBIDITY SOURCES	PERCENT OF RESPONSES
COMPANY DATA	52%
CONSULTANT (MAY INCLUDE COMPANY ADJUSTMENTS)	48%

Note: 25 responses

Provision for adverse deviation

We found that the majority of companies do not include provisions for adverse deviation (PADs) in their morbidity assumptions used for reserve testing. For testing of statutory reserves, only five out of 25 companies included a PAD. Three of those five companies did not use any PAD when testing their GAAP reserves.

Morbidity improvement

For testing of statutory reserves, nine out of 24 companies report including an assumption for future morbidity improvement.

A controversial topic that is difficult to measure in the LTC insurance industry is the use of future morbidity improvement in projections. For testing of statutory reserves, nine out of 24 companies report including an assumption for future morbidity improvement. The level of morbidity improvement ranged from 0.4% to 1.6% per year, for generally 10 to 15 years, although three companies assumed morbidity improvement for 25 to 30 years. For testing of GAAP reserves, two companies that did not assume any future morbidity improvement for statutory reserve testing reported assuming some morbidity improvement, and another assumed a slightly deeper amount of improvement than for statutory reserve testing.

Most companies that include an assumption for future morbidity improvement assume both future mortality and morbidity improvement. Two companies only assume mortality improvement and two companies only assume morbidity improvement.

FUTURE RATE INCREASES

The survey asked if future rate increases were assumed in reserve testing. Specifically, the question asked if any future rate increases were assumed beyond what has already been approved by state regulators. Most companies (15 out of 25) reported assuming future planned rate increases, generally ranging in size from 10% to 20%, although higher amounts were assumed for some blocks of business.

IV. DISABLED LIFE RESERVES

Disabled life reserves (DLR) or claim reserves reflect the value of future claim payments for claims that have already been incurred. The amount of disabled life reserves associated with a block of LTC insurance business generally increases as the block ages, which is due to the increasing claim incidence by policyholder age. DLR calculations can include many nuances and complications and generally are revised to reflect emerging experience more readily than ALRs.

This section is based on responses from all companies, including those no longer selling LTC insurance.

Participating companies were surveyed with regard to the following topics:

- Continuance tables and related reserve methodologies
  - Data sources
  - Continuance table variables
  - Future transfer methodology
  - Waiver of premium methodology
  - Salvage adjustments
- Explicit provision for adverse deviation
- Provision for loss adjustment expense
- Incurred but not reported (IBNR) methodology
- Adequacy
- System
- Reserving approach for complex riders
- Claim status definitions and adjustments

CONTINUANCE TABLES AND RELATED RESERVE METHODOLOGIES

All but one company surveyed followed a continuance table approach when establishing the claim reserve for known claims. One company used completion factors with some adjustments to establish the entire claim reserve, for both reported and not-reported claims.

All but one company surveyed followed a continuance table approach when establishing the claim reserve for known claims.

Data sources

Figure 15 shows the source of the continuance table assumptions. The most common source is the data from a consultant (including times where a company started with consultant assumptions and adjusted them to its own data), followed by completely using the company's own insured data.

FIGURE 15: CONTINUANCE TABLE DATA SOURCES

DATA SOURCE	PERCENT OF RESPONSES
POPULATION DATA	8%
INSURED DATA	42%
CONSULTANT	50%

Note: 26 responses

About 60% of companies indicate that they update the continuance tables less often than annually. The remainder responded that they perform an update at least annually. Compared to our prior survey, companies are updating their continuance tables more frequently. Also, almost all companies indicated that the updates were showing a longer length of stay.

Compared to the 2009 survey, companies are now using more variables in their DLR calculations, particularly now reflecting care setting and benefit period more.

Continuance table variables

Figure 16 shows the primary variables used in the continuance tables. Compared to the 2009 survey, companies are now using more variables in their DLR calculations, particularly now reflecting care setting and benefit period more. This may indicate that companies are developing more sophisticated and detailed assumptions as they try to develop better claim reserve estimates.

FIGURE 16: CONTINUANCE TABLE VARIABLES

VARIABLE	PERCENT OF RESPONSES
AGE	93%
GENDER	84%
CARE SETTING	72%
BENEFIT PERIOD	44%
DIAGNOSIS	16%

Note: Companies can indicate more than one variable. There were 25 responses.

Future transfer methodology

Figure 17 shows the approach taken in reflecting transfers between care settings for comprehensive plans (plans that cover care in both a facility and at home) and companies that vary the continuance tables by care setting. For companies that do not reflect care setting in the continuance table, it can be viewed that transfers are implicitly reflected by using a composite approach (those companies are not included in Figure 17). For the companies that do vary the continuance tables by care setting, the majority of them do not account for transfers.

FIGURE 17: FUTURE TRANSFER METHODOLOGY

METHODOLOGY	PERCENT OF RESPONSES
TRANSFERS NOT REFLECTED	63%
EXPLICIT ADJUSTMENT	31%
IMPLICIT ADJUSTMENT	6%

Note: 16 responses

To demonstrate the care setting transfer issue, consider the following example. A carrier may offer home care-only policies as well as comprehensive policies. Some carriers hold an identical reserve if a policyholder goes on claim while receiving home care under the two different policy types. If the underlying continuance tables are based solely on home care experience, this methodology can potentially understate the comprehensive liability because the claimant will continue to be benefit-eligible even if transferred to a facility. Of course, carriers who employ a similar methodology to nursing home claimants (with a comprehensive policy) may be overestimating the comprehensive claimant's liability because home care is typically less expensive and recovery is often more likely. The materiality of these transferences depends on how the underlying continuance curves are constructed.

The survey responses classified as "explicit" refer to companies that make an explicit adjustment with respect to transfers. As an example of an explicit adjustment for transfers of care, a company might adjust all comprehensive facility DLRs by X% and adjust all comprehensive non-facility DLRs by Y%.

The companies with "implicit adjustments" take an approach in which the underlying continuance tables are developed from comprehensive policies. These companies assume the transfers are then implicitly reflected in the DLR calculation because any historical transfer experience is reflected in the claim runoff assumed. While this may be true if the mix of nursing home and home care of future claim experience remains identical to past experience, an explicit methodology is able to withstand more dynamic changes in the distribution of future claimants.

Waiver of premium methodology

The vast majority of companies reflect waiver of premium benefits in their claim reserve calculations, as seen in Figure 18. This is similar to last year's surveys. It is important to carefully consider the treatment of waiver of premium in the ALR and DLR calculations.

FIGURE 18: WAIVER OF PREMIUM METHODOLOGY

METHODOLOGY	PERCENT OF RESPONSES
WAIVER REFLECTED IN DLR	81%
WAIVER NOT REFLECTED IN DLR	19%

Note: 26 responses

Salvage adjustments

As shown in Figure 19, most companies make explicit "salvage" adjustments in their claim reserve calculations, similar to last year's survey. These calculations account for paid claim experience that is less than the maximum daily, weekly, or monthly amount specified in the policy contract. For example, a policy with a maximum benefit of $100 per day may reimburse actual costs of only $80 per day for home care services. While not addressed with all survey participants, for those companies that responded "none," it is our experience that they do not make an explicit salvage adjustment, but do commonly account for services that are rendered less than seven days a week in their reserve calculation.

Most companies make explicit "salvage" adjustments in their claim reserve calculations, similar to last year's survey. These calculations account for paid claim experience that is less than the maximum daily, weekly, or monthly amount specified in the policy contract.

Salvage adjustments may be determined on a seriatim or aggregate basis. Each approach has its own merits when considering variability, credibility, and calculation issues.

FIGURE 19: SALVAGE METHODOLOGY

METHODOLOGY	PERCENT OF RESPONSES
NOT REFLECTED	36%
SERIATIM	24%
AGGREGATE	40%

Note: 25 responses

EXPLICIT PROVISIONS FOR ADVERSE DEVIATION

Most companies do not include explicit provisions for adverse deviation (PAD) in the DLR calculation. The survey results are contained in Figure 20.

FIGURE 20: STATUTORY RESERVE PAD

PAD AS % OF DLR	PERCENT OF RESPONSES
0%	69%
1% - 5%	27%
6% - 10%	4%

Note: 26 responses

The results in this year's survey are consistent with last year's survey. Survey results also indicated that the PAD on a TAX basis was equal to the STAT basis. In addition, GAAP was equivalent to STAT, except for two companies, which used lower GAAP PADs.

PROVISION FOR LOSS ADJUSTMENT EXPENSE

We surveyed the participating carriers with regard to the provisions for loss adjustment expense (LAE) that are included in their claim reserve calculations. Almost all companies include a flat percentage load to their DLR and IBNR. The range of the LAE load varies by company as shown in Figure 21.

FIGURE 21: LOSS ADJUSTMENT EXPENSE (LAE) PERCENTAGE

	INDIVIDUAL COMPANIES		
LAE (AS % OF DLR AND IBNR)	STAT	TAX	GAAP
0%	10%	26%	6%
0.1% - 2.5%	24%	26%	29%
2.6% - 5.0%	52%	37%	65%
> 5.0%	14%	11%	0%

Note: 21 responses for STAT, 19 for TAX, and 17 for GAAP

Average LAE held on a STAT basis is 3.2%, which is nearly the same as last survey's 3.3% average. Some companies hold a lower LAE amount for the TAX and GAAP DLR.

Average LAE held on a STAT basis is 3.2%, which is nearly the same as last survey's 3.3% average. Some companies hold a lower LAE amount for the TAX and GAAP DLR. The average LAE load for TAX and GAAP is 2.4% and 2.8%, respectively. Unlike the case with ALR reserves, where most companies only load GAAP ALR reserves for the LAE liability, most companies load all three DLR bases (STAT, TAX, and GAAP) for LAE.

Several companies hold a different level of LAE assumptions for GAAP reserves between DLR and ALR. Of the 16 companies that responded to both the GAAP DLR and ALR LAE questions, 25% hold higher LAE levels on the ALR, 44% hold higher LAE levels on the DLR, and the remainder holds the same level.

INCURRED BUT NOT REPORTED (IBNR) METHODOLOGY

The table in Figure 22 indicates the approach taken by companies with respect to their IBNR calculation. Among the wide variety of approaches used to calculate the IBNR, the completion method (or claim triangle approach) is the most common. Another approach is to subtract the reported incurred loss ratio from the anticipated loss ratio times earned premium to estimate the amount of incurred but unreported claims. A similar approach would be to subtract the reported incurred claims from the amount of expected claims. In Figure 22, the "other" approaches include a combination of the completion method and loss ratio approaches or high-level estimation.

FIGURE 22: IBNR METHODOLOGY

METHODOLOGY	PERCENT OF RESPONSES
COMPLETION / TRIANGLE APPROACH	35%
LOSS RATIO / % OF PREMIUM OR EXPECTED CLAIMS	15%
COMBINATION OF COMPLETION AND LOSS RATIO	19%
OTHER	31%

Note: 26 responses

ADEQUACY

Almost all companies perform some form of reserve adequacy testing on their claim reserves, such as a claim retrospective reserve analysis. The majority of companies (63% of the 24 responses) indicated that these tests were performed annually while others were more frequent (20% reported quarterly and 17% reported monthly).

SYSTEM

Figure 23 shows the number of carriers that use a commercial valuation system for their disabled life reserves versus those that have a "homegrown" system. Of the companies that responded to both this year's survey and the 2009 survey, no company switched from either a commercial system to homegrown or vice versa.

FIGURE 23: DLR SYSTEM

SYSTEM	PERCENT OF RESPONSES
HOMEGROWN	58%
COMMERCIAL	42%

Note: 26 responses

The use of homegrown systems is more common for DLRs than ALRs. Eight companies that use commercial systems for their ALRs use homegrown systems for their DLRs.

RESERVING APPROACH FOR COMPLEX RIDERS

Companies were asked about the modeling approach for two of the more complex riders for LTC, nonforfeiture and shared care benefits. Almost all companies responded that they either ignore nonforfeiture benefits such as the shortened benefit period or conservatively hold the full benefit period (as opposed to only holding the claim reserve for the shortened period of time). Some mentioned they did not make any adjustment as these benefits are quite rare and immaterial. For shared care benefits, 41% of the 17 companies that responded indicated that they adjust the claim reserve to account for shared care benefits. The most common approach to accounting for shared care benefits was to assume that the full benefit period of both spouses was available to the current claimant. The number of companies that explicitly model shared care benefits has increased slightly from the 2009 survey.

CLAIM STATUS DEFINITIONS AND ADJUSTMENTS

As the size of claim reserves increase, more companies are refining the claim reserve calculation to address claim situations other than the typical "open and in claim payment status" situations. Some of those other situations include "claims during the elimination period," "pending claims waiting for approval," "closed claims that may reopen," and "claims in final payment status."

As the size of claim reserves increase, more companies are refining the claim reserve calculation to address claim situations other than the typical "open and in claim payment status" situations.

Figure 24 shows that the most common approach for claims in the elimination period is to explicitly account for them in the disabled life reserve. Some companies reported holding a percentage of the DLR for claims in the elimination period. Another approach is to implicitly include them in the IBNR development.

FIGURE 24: CLAIMS DURING THE ELIMINATION PERIOD	
APPROACH	**PERCENT OF RESPONSES**
EXPLICITLY ACCOUNTED FOR IN DLR	58%
IMPLICITLY INCLUDED IN IBNR	42%

Note: 26 responses

Similar to claims in the elimination period, the majority of companies explicitly reserve for pending claims. These claims are known to the company, but are in the process of having their benefit eligibility verified. The most common approach is to include these claims with the known disabled life reserve, with some companies applying an adjustment factor to reflect the probability that the claim will be approved.

FIGURE 25: PENDING CLAIMS WAITING FOR APPROVAL	
APPROACH	**PERCENT OF RESPONSES**
EXPLICITLY ACCOUNTED FOR IN DLR	58%
IMPLICITLY INCLUDED IN IBNR	42%

Note: 26 responses

Half of the companies establish a claim reserve for closed claims that may reopen. Depending on the definition of a claim, some claims may close, but end up reopening later as the same claim.

Figure 26 shows that half of the companies establish a claim reserve for closed claims that may reopen. Depending on the definition of a claim, some claims may close, but end up reopening later as the same claim. For example, a claimant may recover and stop claiming benefits, but relapse a couple months later and need to resume benefits. In that situation the previously closed claim will reopen. Most of the companies making an explicit adjustment indicated that they make a separate calculation to hold a reserve for those types of claims. A few indicated that those types of claims are covered in the general IBNR. It should be noted that the number of companies making some adjustment has increased substantially since the 2009 survey, when only 18% of the 22 responses indicated that they made some adjustment.

FIGURE 26: CLOSED CLAIMS THAT MAY REOPEN	
APPROACH	**PERCENT OF RESPONSES**
NOT REFLECTED	50%
SOME ADJUSTMENT MADE	50%

Note: 26 responses

Figure 27 shows that most companies do not make any adjustment for claims that are known to be in a final payment status. Sometimes it is known that an open claim is about to be closed, but there is only one payment left (such as in the case of death, but the final bill is outstanding). Some companies do make an adjustment for those claims, reducing the claim reserves.

FIGURE 27: CLAIMS IN FINAL PAYMENT STATUS	
APPROACH	**PERCENT OF RESPONSES**
NO ADJUSTMENT	77%
SOME ADJUSTMENT MADE	23%

V. ASSET ASSUMPTIONS

The valuation survey asked companies about the assets supporting the reserves. The survey included questions relating to asset allocation, actual portfolio yield, and current pricing interest rate relating to each company's LTC product line. In addition, we asked about any investment hedging strategies that may be used.

ASSET ALLOCATION

Figure 28 summarizes the average asset allocation by different asset classes and compares the responses from this year's survey to our prior survey. The average asset allocation is based on a simple average of responses. The asset allocation did vary considerably by company. Some companies hold large portions of their assets in Treasuries and AAA and AA bonds, while other companies hold a greater proportion of risky assets.

There has also been a shift in asset class over the survey period. In general, the mix of asset class indicates a shift toward more risky assets. For example, the average portion of AAA bonds dropped from 13.8% to 4.5%, while A and BBB bonds increased from 28.5% to 31.7% and 16.4% to 23.3%, respectively. Mortgages also show a significant decrease over the period, dropping from 14.2% to 5.8%. Lastly, the "Other" category increased over the period. Companies indicated that they included municipal bonds, structured settlements, and private placements in the "Other" category. It should be noted that these changes over the period are not overly influenced by any one company, but rather the trend is seen in many companies.

There has also been a shift in asset class over the survey period. In general, the mix of asset class indicates a shift toward more risky assets.

FIGURE 28: ASSET ALLOCATION

ASSET CLASS	2009 SURVEY	2012 SURVEY	CHANGE
TREASURIES	4.9%	4.8%	-0.1%
AAA BONDS	13.8%	4.5%	-9.3%
AA BONDS	7.8%	8.3%	0.5%
A BONDS	28.5%	31.7%	3.2%
BBB BONDS	16.4%	23.3%	6.9%
BB AND LOWER	4.9%	4.9%	0.0%
PREFERRED STOCK	0.4%	0.1%	-0.3%
COMMON STOCK	0.8%	0.7%	-0.1%
REAL ESTATE	0.5%	1.0%	0.5%
MORTGAGES	14.2%	5.8%	-8.4%
OTHER	7.8%	14.8%	7.0%

Note: 23 responses for the 2012 survey and 16 responses for the 2009 survey.

When determining the asset allocation for LTC products, it is important to consider matching asset and liability risks. For example, the prepayment risk in some callable bonds and mortgages should be carefully considered for LTC. When interest rates drop, callable bonds and mortgages are more likely to be called, reducing the portfolio yield. As a result, unlike other product lines, for LTC there is no offsetting adjustment on the liability side for changes in asset yield (such as changing the crediting rate), thereby making these assets potentially more risky for LTC than for other products.

In addition, companies should be aware of the potential risk-based capital implications with respect to asset allocation selection. For example, the NAIC requires more risk-based capital to be held on more risky assets. The additional yield from those more risky assets is therefore reduced by the additional cost of capital for holding those assets as well as the higher default risk.

DURATION FOR LONG-TERM CARE

The survey asked for the asset duration for the LTC product line. There was a wide range of responses. Of 22 responses, the duration ranged from 5.5 to 21.0 years, with an average of 11.1 years. However, most responses (68% of 22 companies) fell within the range of eight to 14 years. Compared to our prior survey, the average duration increased slightly. The 2009 survey reported an average duration of 10.0 years.

CURRENT PORTFOLIO YIELD

The average yield was 5.72% and ranged between 3.89% and 7.00%. Overall, the average yield declined from 5.99% in our prior survey.

Figure 29 shows the current portfolio yield from the 24 companies that responded. The average yield was 5.72% and ranged between 3.89% and 7.00%. Overall, the average yield declined from 5.99% in our prior survey. We did not notice a clear correlation between a company's asset allocation and the resulting portfolio yield. This may be due to the timing of when assets were purchased rather than the asset allocation.

FIGURE 29: CURRENT PORTFOLIO YIELD

YIELD	PERCENT OF RESPONSES
<=5.00%	17%
5.01% TO 5.50%	4%
5.51% TO 6.00%	42%
6.01% TO 6.50%	33%
> 6.50%	4%

Note: 24 responses

CURRENT PRICING INTEREST RATE ASSUMPTION

Figure 30 shows the current pricing interest rate assumptions for just the companies that are currently selling LTC insurance. The average response was 5.27% and ranged from 4.00% to 6.25%. Compared to the 2009 survey, the average pricing interest rate decreased from the prior survey's average of 5.73%. In today's low interest rate environment, the pricing interest rate, as expected, is lower than the actual portfolio rate.

FIGURE 30: CURRENT PRICING INTEREST RATE ASSUMPTION

ASSUMPTION	PERCENT OF RESPONSES
<=5.00%	31%
5.01% TO 5.50%	23%
5.51% TO 6.00%	38%
6.01% TO 6.50%	8%
> 6.50%	0%

INTEREST RATE HEDGING APPROACH

The survey also asked about use of any interest rate hedging strategies, either internally between various product lines or with external parties. The majority of companies (79% of the 24 responses) do not utilize any form of interest rate hedging. Five companies use an external hedge, such as an interest rate swap. One company uses both an internal hedge between different product lines as well as an external hedge. This is generally consistent with the 2009 survey. As may be expected, companies that employ hedging strategies tend to have larger blocks of business where they achieved the critical mass needed for efficiently establishing an external hedging approach.

The majority of companies (79% of the 24 responses) do not utilize any form of interest rate hedging. Five companies use an external hedge, such as an interest rate swap.

FIGURE 31: INTEREST RATE HEDGING APPROACH

APPROACH	PERCENT OF RESPONSES
DO NOT HEDGE	79%
INTERNAL AND EXTERNAL HEDGE	4%
EXTERNAL HEDGE	17%

APPENDIX A

LIST OF PARTICIPATING COMPANIES

Allianz Life Insurance Company of North America

Bankers Life & Casualty

CMFG Life

CNA

Conseco Insurance Companies

COUNTRY Life

Equitable Life & Casualty Insurance Company

Genworth Financial

John Hancock

Knights of Columbus

LifeSecure Insurance Company

Metropolitan Life Insurance Company

Minnesota Life Insurance Company

Mutual of Omaha

New York Life

Northwestern Mutual

Physicians Mutual Insurance Company

Prudential Financial

RiverSource Life Insurance Company

Senior Health Insurance Company of Pennsylvania

State Farm Mutual Auto Insurance Co.

Thrivent Financial for Lutherans

Transamerica

Union Fidelity Life Insurance Company

United Security Assurance Company of PA

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